



NEW (DIGITAL) TECHNOLOGIES THAT HAVE BEEN INTEGRATED INTO THE ART CLASS AND THEIR EFFECT ON THE LEARNING PROCESS.

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Most movements in art education, including the visual arts, typically represent an anthropocentric perspective (Leonard, 2020). In the art room, teachers traditionally teach students that the masterpieces and art from museums are the only art worthy of study (Efland, 2004; Freedman, 2003). Similar relationships exist in art education in schools of Uzbekistan. However, this position is losing its power as our daily lives include more and more computer-generated content (Leonard, 2020).

Throughout the 2000s a series of technological and cultural shifts have emerged in the example of user-friendly “prosumer software” for image, video, and sound editing; the evolution from a specialized environment of the early web to the accessibility of user-generated content of Web 2.0; the rapid proliferation of social networking platforms; and the subsequent transition of these developments to mobile platforms (Smith, 2020). The development of the Web 2.0 technologies has led to the fact that the Internet has become not only a source of information but also an intermediary in communication. With the increasing commercialization of the Internet and its role in the rapid acceleration of the global economic system, the Internet has changed both in terms of content and appearance.

Digital media, in the example of animations and videos, has started to become a part of society, especially among youth. Mills (2010) emphasizes that the inner-city youth became creators rather than consumers of digital products, using leading-edge software to create artwork, animations, simulations, multimedia presentations, virtual worlds, musical creations, websites, and robotic constructions. As a result, this process has developed a graphic design convention that is closely related to virtual art. Examples of this can be seen through web design elements such as frames, banner ads, animated GIFs, cursor changes, and rollover effects. This process is clearly reflected in the recently published studies (Long, 2001; Watts, 2008; Colman, 2004; Guillard-Patton, 2012; Leonard, 2020; Smith, 2020) on the arts curriculum, as some types of technology are actively incorporated into it. Creating Graphic design and Animation elements has already become a part of school activities in art classes in Finland and South Korea (Khujamberdiyeva & Isakov, 2021). Moreover,





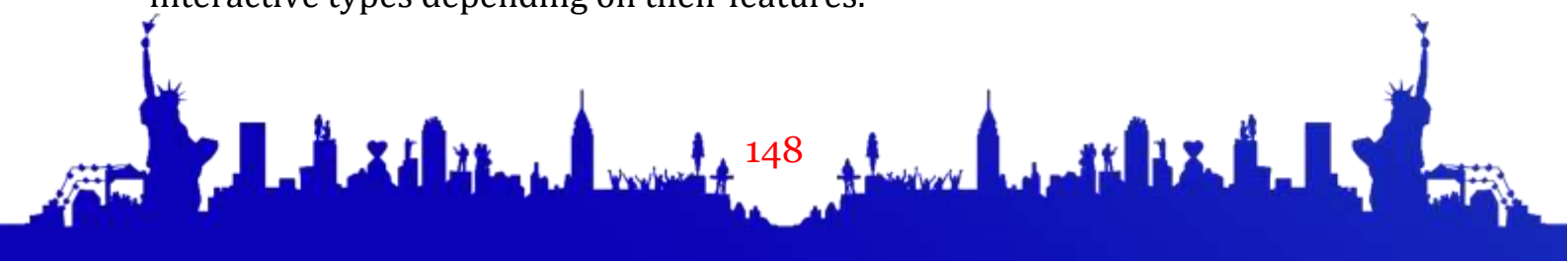
Educational institutions in England, Scotland, Canada, and Australia all have a more wide-ranging and established approach to teaching media (Watts, 2008). In addition, taking into account that digital-visual culture and video games are influential in youth lives, the integration of technologies could offer a number of pedagogical opportunities (Guillard-Patton, 2012). Similarly, Long (2001) provides that a contemporary approach to art-making through new technologies, such as digital media, could remedy some of the problems being encountered in the content of children's experiences. The design of digital art workstations in computer classrooms inherently continues to support this idea of the isolated artist's space. Smith (2020), by citing Campana (2011), asserts that the notion of art as individual or solitary work can "obscure the more integrated roles that art, artists, and educators can have in community-building, cultural affirmation, and articulating a need for change" (p. 279).

Analysis of articles on the integration of technology into art curriculum, it was found that different experts have focused on different examples of digital technology such as multimedia (Long, 2001), internet art (Colman, 2004), digital art (Smith, 2020) videos (Watts, 2008; Guillard-Patton, 2012) and artificial intelligence (Leonard, 2020). Furthermore, even considerations on future art curriculum close with advanced technologies.

Digital tools. As we consider the possibility of using a certain type of digital technology in arts education and including it in the school curriculum, finding the right software or technology is another subject of our analysis. In other words, I needed to define which "digital instrument" is on-trend or effective to use as a "digital tool" in art classes. Carefully selected platforms can foster a creative, networked classroom environment that blurs the boundaries of individual and collective creativity. Here, Smith compares digital tools to a hammer (Smith, 2020). According to the author:

"If a human is not actively using a hammer to hit a nail, the hammer remains still and without agency. This shows a humanist bias because the only transformative influence is coming from the human, and nothing else has transformative power until it is decided so by a human" (Smith, 2020).

In this regard, Long refers to stability and the robustness of Mediator's performance (Long, 2001). Researchers have used a variety of tools in the process of creating digital art samples with students. However, we have divided them into Raster graphics, Vector graphics, Video editing software and interactive types depending on their features.



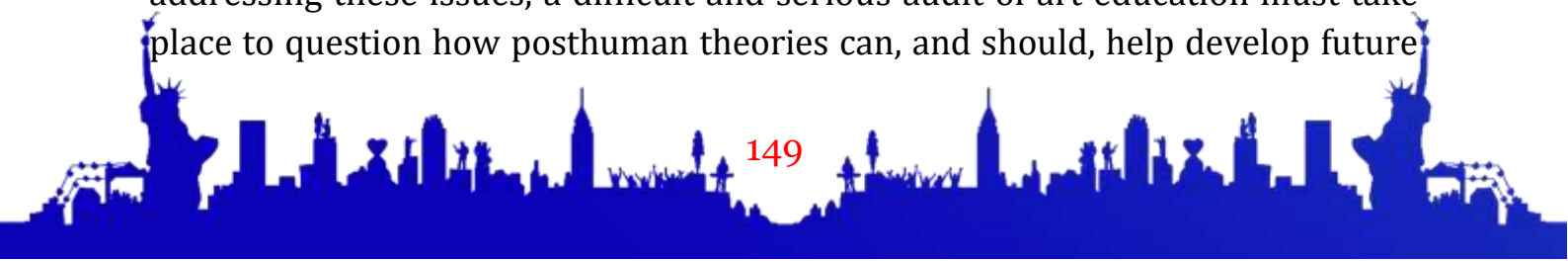


The most commonly used tool among them was the Photoshop (Long, 2001; Smith, 2020) application which works with raster images. Long prefer this software because of its popularity among students (Long, 2001). Smith, by focusing on gaining a solid framework from the practical side of the technical instruction, also used various software applications such as Photoshop, After Effects, and Audacity (Smith, 2020). Smith also highlights the affordances of Adobe Photoshop insisting that as it offered limited features in the past, and has been developed in recent years, it started to offer more features using interactive algorithms (Smith, 2020).

On the other hand, with the issues of restrictions on interaction and the possibility of using raster graphics in a wide range, a need for vector images emerges. At this point, researchers are also considering the use of applications that create vector images in the teaching of fine arts. Particularly, Smith offers students formal skills for digital artmaking, such as the fundamentals of Illustrator or Auto Draw, which creates vector images. (Smith, 2020) In addition, Smith mentions that to create artworks digital image software developers are exploring new ways of interactive art-making. Popular Google application called "Quick, Draw!" and GauGAN (Smith, 2020) with AI are the examples of this. Particularly, GauGAN is remarkable in its ability to work with human users in the creation process of artistic production. Such programs should have art educators questioning the adequacy of existing art curricula in terms of addressing these developments (Smith, 2020). Furthermore, most recently, the emergence of free creative platforms provides new opportunities to build assignments for students that allow for real-time collaboration, such as using a cloud-based image editing application such as Google Drawings, which allows multiple users on different screens to simultaneously add and manipulate images on the same cloud file (Smith, 2020).

Regarding interactivity, Long provides the name of Multimedia products such as Hyperstudio, Director and Mediator as they support multi-modal blending of images (still and moving), sound and text as well as offering the potential to make the outcomes interactive (Long, 2001).

Leonard discusses that, by citing O'Neil (2018), many people do not know how to critically engage with the content produced by computers, creating an artificial intelligence (AI) black box phenomenon, where the computer's functioning and decision-making process is unknown or unchecked. To begin addressing these issues, a difficult and serious audit of art education must take place to question how posthuman theories can, and should, help develop future





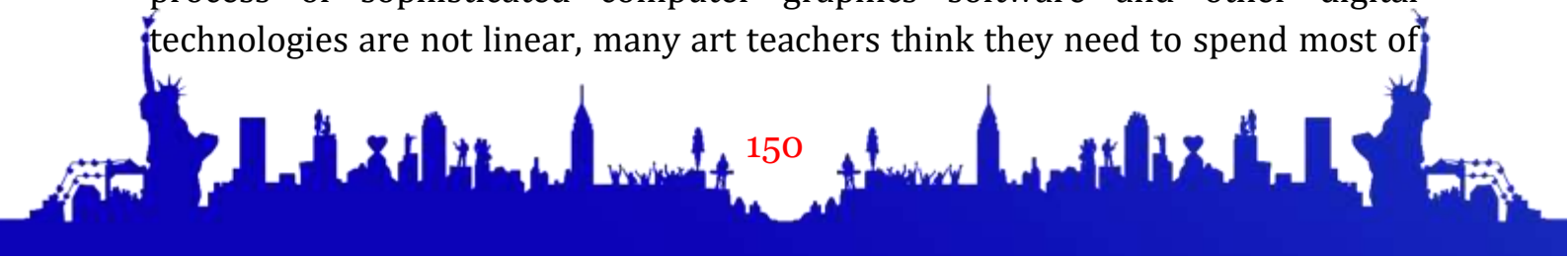
art education curricula (Leonard, 2020). Regarding this issue, Smith highlights the significance of reframing post-internet art as a mode of inquiry for art classrooms points to a future of art curriculum that actively (1) opens modes of inquiry that encourage a shift toward collective and collaborative artmaking and sharing, (2) embraces online interaction as a conduit for offline interaction and material engagement, (3) stimulates more horizontal and networked structures of learning, (4) qualitatively decenters digital artmaking curriculum from hegemonic art canon narratives, and (5) privileges artist and student voices in the cultivation of critical media literacy through artmaking (Smith, 2020).

Influence of integrating digital tools to learning and students' lives. However, despite diversity of approaches, the majority of researchers advocates its role on student engagement in class, preparation for the future as well as fostering multiliteracy in the classroom by helping students to develop critical viewing and digital art skills. In this respect, Watts advocates that the teachers should include such topics as ethics, social awareness, history, or appropriate communication skills in a media curriculum, most of which relate to technical skills and job preparation for students (Watts, 2008).

The role of digital technologies is also highlighted in the Education for Sustainable Development Program, which was adopted by UNESCO in 2015 as part of "Education 2030". In particular, Irina Bokova says about the educational process aimed at achieving the goals of the program:

"A fundamental change is needed in the way we think about education's role in global development because it has a catalytic impact on the well-being of individuals and the future of our planet. ... Now, more than ever, education has a responsibility to be in gear with 21st-century challenges and aspirations, and foster the right types of values and skills that will lead to sustainable and inclusive growth, and peaceful living together" (UNESCO, 2017)

In this term of view, according to the International Society for Educational Technology, technology allows students to work with information technology, solve problems and make decisions, be creative and effective users of a productive tool (ISTE, 2000). Through the use of technology in the teaching process, the development of skills and competencies in this area will help to prepare students for future careers. Colman insists that the integration of digital media into the arts curriculum encourages students to use computers and other digital technologies for personal and collective expression. As the learning process of sophisticated computer graphics software and other digital technologies are not linear, many art teachers think they need to spend most of





their class time adapting students to the software environment. Hence, according to Colman, students feel that their experience in computer graphics that gained in art classes helps them to find a job after graduation (Colman, 2004).

The role of technologies in terms of engagement of students in the class is more compelling. Watts claims that watching digital media is just enjoyable for students. Therefore, they spend a lot of time on such activities not only in school but also outside of school (Watts, 2008). According to Greenhow, it was estimated that by 2014 ninety per cent of school-age youth in the US use the Internet, and the fastest-growing group of users are adolescents aged 12 to 17 (Greenhow, Robelia, & Hughes, 2009). Thus, using technology to teach art is another way to attract and involve a wider group of students in artistic production (Watts, 2008). Long also noted this in his research. In his opinion, the positive attitude of young people towards computer multimedia communications, entertainment and forms of games in an out-of-school shows that education can benefit young people, since they are associated with practices that are already relevant and interesting (Long, 2001). As an example, Long points out that despite the low expectations from the students attitude, the participation was surprisingly excellent (Long, 2001). A similar result was encountered in Colman's (2004) experiment.

Regarding literacy, using technology in art classes means not only becoming a computer user but also becoming digital media literate by creating some examples of digital art. Watts (2008) insists that simply using a computer does not mean a student achieves media literacy. If a student uses a computer as a simple user, he or she may achieve technical skills in computer software, but not necessarily media literacy. In this regard, Long (2001) argues that in our computer society, imagery is one of the main means of obtaining information. Hence, he prefers to more clearly define "literacy" in modern terms as "multimedia literacy". However, digital literacy is attracting the attention of educational professionals. Even a decade ago Mills mentioned about emerged trends in researches on digital media production, with examples of movie-making and interactive digital art (Mills, 2010).

Another important component of creating digital art in classrooms is its role in shaping creativity. Smith, building on the work of Tillander (2011), argues that when art educators work on curriculum development, they should expand the use of digital technology to promote creativity. Long also says that the multi-





modal work done during his project has allowed him to enter new forms of creativity. (Long, 2001)

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